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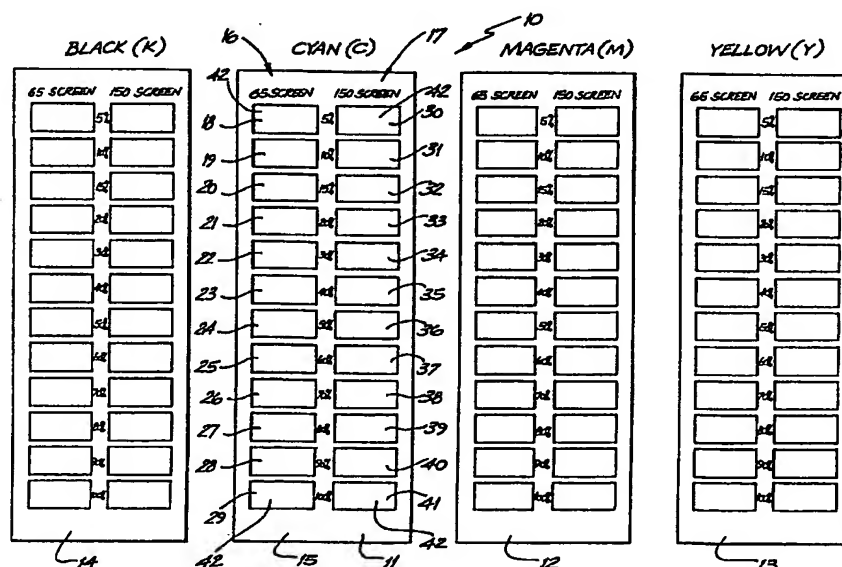
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(54) Title: TINT OVERLAY SYSTEM



(57) Abstract

A method of colour specification is disclosed which utilises a tint overlay system (10, 50) wherein one or more overlays (11, 12, 13, 14, 51) incorporating light transmissible, tinted panels (42, 62) are arranged to be selectively overlayed upon a coloured surface (44) whereby a modified colour is observed and which can be specified for the purpose of printing the modified colour.

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TINT OVERLAY SYSTEMFIELD OF THE INVENTION

This invention comprises of transparent overlays adapted to be used primarily by designers, finish artists and
5 production managers to specify colours for printed material.

BACKGROUND ART

The existing systems are incomplete and are printed on white paper which does not indicate how colours will actually appear on coloured or textured paper stocks. No existing
10 system provides a percentage breakdown for all four process colours - nor a percentage breakdown of every pantone PMS colour and none can be used on both opaque and transparent surfaces.

There are many books and poster sheets provided by
15 printing companies with percentage breakdowns of three colours - cyan, magenta and yellow and some books provide some percentage breakdowns of black with those colours but not all percentage breakdowns.

These limitations are addressed by embodiments of this
20 invention.

DISCLOSURE OF THE INVENTION

Accordingly, in one broad form of the invention there is provided a method of producing colours for the purpose of specification for printing said method comprising providing a
25 first overlay having a plurality of light transmissible panels graded by quantity of a first colour; a second overlay having a plurality of light transmissible panels graded by quantity of a second colour; a third overlay having a

plurality of light transmissible panels graded by quantity of a third colour; a fourth overlay having a plurality of light transmissible panels graded by quantity of a fourth colour; said method further comprising modifying a colour on a substrate by application of one or more of selected ones of said light transmitting panels over said colour on said substrate whereby the appearance of said colour through said light transmitting panels is modified to produce a modified colour in a manner which can be specified for the purpose of printing said modified colour.

Preferably said light transmissible panels are located so as to cover apertures in said overlays.

Preferably said first, second, third and fourth colours comprise colours from which the majority of the colours of the spectrum can be created by appropriate superposition of said light transmissible panels.

Preferably said plurality of light transmissible panels on any one of said first, second, third or fourth overlays comprise a series of light transmissible panels progressing from a panel at a first end having tint comprising a a low quantity of colour to a panel at an other end having a tint comprising a high quantity of colour.

Preferably each said overlay includes two series of panels, a first series at a low definition and a second series at a higher definition.

Preferably the definition of said first series is 65 screen and the definition of said second series is 150 screen.

Preferably said first colour comprises black, said second colour comprises cyan, said third colour comprises magenta and said fourth colour comprises yellow.

5 Preferably said quantities of colours on any one series of light transmissible panels on any one of said overlays is graded according to the following steps of tint: 5%, 10%, 15%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%.

Preferably said light transmissible panels comprise film.

10 In a further broad form of the invention there is provided a tint overlay panel for use with a pantone colour matching system colour booklet or the like; said panel including a series of light transmissible panels, each light transmissible panel being coloured a specific quantity of white.

15 Preferably the number of said light transmissible panels is nine graded according to the following quantities of white: 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%.

20 Preferably said light transmissible panels are made of photographic film exposed so as to achieve the desired quantity of colour throughout each panel.

25 Preferably said film is exposed in a reverse manner whereby a given tint percentage to be associated with a given said light transmissible panel refers to a percent of panel area which allows light to pass therethrough without modification.

Preferably the percentage rectangles on the overlays may be the same depth as the colour swatches in the pantone

PMS book for easy use.

In yet a further broad form of the invention there is provided a method of producing colours for the purpose of specification for printing; said method comprising providing
5 an overlay having a plurality of light transmissible panels graded by absence of a quantity of a white colour; said method comprising modifying a colour on a substrate by application of selected ones of said light transmissible panels over said colour whereby the appearance of said colour
10 through said light transmissible panels is modified to produce a modified colour in a manner which can be specified for the purpose of printing said modified colour.

In yet a further broad form of the invention there is provided a tint overlay panel having a plurality of light
15 transmissible panels thereon graded by quantity of a specified colour.

The invention can be used whether you are printing in one colour, duotone, four colour process or four colour process with special colours - in line or line and tone. It
20 can be used for all printing methods.

The 65 line screen percentages are used when stipulating line printing and the 150 line screen is for high quality printing.

The overlays can be film, not printed, which ensures
25 the accuracy of every colour overlay - no dot spread. This also reduces damage from use.

BRIEF DESCRIPTION OF THE DRAWINGS

In order that the invention may be more readily

understood and put into practical effect, reference will now be made to the accompanying drawings in which:-

- Fig. 1 is a plan view of four transparent overlays according to a first embodiment of the invention,
- Fig. 2 illustrates a method of use of the overlay panels of Fig. 1,
- Fig. 3 is a plan view of a single transparent overlay according to a second embodiment of the invention, and
- Fig. 4 illustrates a method of use of the overlay of Fig. 3.

DESCRIPTION OF PREFERRED EMBODIMENTS

With reference to Fig. 1 the first embodiment of the invention will be described suitable for use with systems such as CMYK systems of printing wherein colours are made up from positive mixing of the printing colours cyan, magenta, yellow and black.

With specific reference to Fig. 1, a first embodiment of the tint overlay system 10 comprises four separate overlays 11, 12, 13, 14.

Each overlay, using overlay 11 as an example, comprises an elongate, planar sheet 15 having two series 16, 17 of contiguous apertures passing therethrough comprising a first series 18 to 29 commencing at a top left hand end of sheet 15 and finishing at a lower left hand end of elongate planar sheet 15. The second series 17 of contiguous apertures

comprises apertures 30 to 41 commencing at a top right hand portion of sheet 15 and finishing at a lower right hand portion of the sheet 15.

By "contiguous" is meant that the apertures follow each other in an ordered geometrical relationship - in this case a straight line relationship.

Each aperture is approximately 1cm x 2cm in dimension and is covered by a tinted, light transmissible panel 42. In this embodiment the light transmissible, tinted panel 42 is made from a piece of high quality photographic film exposed so as to provide the desired tint.

Each panel 42 is of the one tint over the aperture area which it covers. However the tint for each aperture is different. In the case of first series 16 of contiguous apertures the tint of the panel covering first aperture 18 is 5% cyan whilst the tint of the panel covering aperture 19 is 10% cyan. The tints for respective panels covering apertures 20 to 29 is respectively 15%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90% and 100%.

The tints of the panels covering the second series of contiguous apertures correspond with those of the first series of contiguous apertures 16. The difference between the two series is that the definition of the tint of each tinted panel in first series 16 is 65 line screen whilst the definition of the tints making up the tinted panels 42 of the second series 17 is 150 line screen.

The 65 line screen tints of first series of contiguous apertures 16 are utilised when stipulating line printing

colours whilst the 150 line screen tints of the second series of contiguous apertures 17 is utilised for stipulating colours for high quality printing.

5 The construction of overlays 12, 13 and 14 is identical to that of overlay 11 as described above save that the tints of the tinted panels 42 are tints of magenta for overlay 12, are tints of yellow for overlay 13 and are tints of black for overlay 14.

10 In use, with reference to Fig. 2 the tint overlay system 10 provides four transparent positive film overlays in 65 and 150 line screens with tint percentages from 5% to 100% of all four colours: black, cyan, magenta and yellow. This enables the user to combine all four colours in any combination of percentages on any paper stock or transparency
15 at one time. For example, as shown in Fig. 2, yellow overlay 13 is placed above magenta overlay 12 to obtain discreet percentages of orange when various ones of the panels 42 of overlay 13 are aligned with various ones of the tinted panels 42 of overlay 12, such as along line of sight 43.

20 The overlays can be used as illustrated in Fig. 2, whereby one or more of them are arranged to overlay another coloured surface 44 which can be a particular coloured paper stock or can be itself a transparency of specified colour.

25 In a particular form the coloured surface 44 comprises pages from a CMYK book as commonly used by persons associated with the printing industry for the specification of colours for use with printing.

In summary, with reference to Figs. 1 and 2:-

If you place the cyan overlay on top of the black you get percentages of a blue black.

If you place the yellow overlay on top of the magenta
5 you get percentages of orange.

If you place the yellow overlay on top of the cyan you get percentages of green.

If you place the cyan overlay on top of the magenta you get percentages of purple etc.

10 With reference to Figs. 3 and 4 a second embodiment of the invention is shown comprising a tint overlay assembly 50 which comprises a single overlay 51 in the form of an elongate planar sheet in which are located a contiguous series 52 of apertures comprising apertures 53 to 61.

15 As for the first embodiment these apertures are each covered by a tinted panel 62 covering the entire area of each aperture 53 to 61.

Each tinted panel 62 is of one tint throughout, however adjacent tinted panels are of different tints and, in fact,
20 are graded in sequence in the percentages indicated in Fig. 3 starting at 10% and ascending in 10% increments to 90%. Ideally the panels are made from high quality film graded in percentages of white.

In contrast to the arrangement of the first embodiment the percentage markings adjacent each tinted panel represent, in effect, a percentage of light transmission through the tinted panel (as opposed to light blocked from passing
5 through the panel).

When you place the white overlay on a solid colour you get percentages of that colour.

With reference to Fig. 4 the assembly 50 of Fig. 3 is placed over a sheet 63 containing a solid pantone PMS colour.
10 The percentage of white of the particular panel 62 aligned over the solid colour causes the human eye to see that colour attenuated by the appropriate percentage indicated beside the panel 62. So, for example, the 60% panel of aperture 58 aligned over a solid PMS colour will provide an indication to
15 the eye of a specification of 60% of that colour as it would appear when printed.

The above describes only some embodiments of the present invention and modification obvious to those skilled in the art can be made thereto without departing from the
20 scope and spirit of the present invention.

CLAIMS

1. A method of producing colours for the purpose of specification for printing said method comprising providing a first overlay having a plurality of light transmissible panels graded by quantity of a first colour; a second overlay having a plurality of light transmissible panels graded by quantity of a second colour; a third overlay having a plurality of light transmissible panels graded by quantity of a third colour; a fourth overlay having a plurality of light transmissible panels graded by quantity of a fourth colour; said method further comprising modifying a colour on a substrate by application of one or more of selected ones of said light transmitting panels over said colour on said substrate whereby the appearance of said colour through said light transmitting panels is modified to produce a modified colour in a manner which can be specified for the purpose of printing said modified colour.

2. The method of claim 1 wherein said light transmissible panels are located so as to cover apertures in said overlays.

3. The method of claim 1 or claim 2 wherein said first, second, third and fourth colours comprise colours from which the majority of the colours of the spectrum can be created by appropriate superposition of said light transmissible panels.

4. The method of claim 3 wherein said plurality of light transmissible panels on any one of said first, second, third or fourth overlays comprise a series of light transmissible panels progressing from a panel at a first end having tint comprising a low quantity of colour to a panel at an other

end having a tint comprising a high quantity of colour.

5. The method of claim 4 wherein each said overlay includes two series of panels, a first series at a low definition and a second series at a higher definition.

6. The method of claim 5 wherein the definition of said first series is 65 screen and the definition of said second series is 150 screen.

7. The method of claim 6 wherein said first colour comprises black, said second colour comprises cyan, said third colour comprises magenta and said fourth colour comprises yellow.

8. The method of claim 7 wherein said quantities of colours on any one series of light transmissible panels on any one of said overlays is graded according to the following steps of tint: 5%, 10%, 15%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%.

9. The method of any previous claim wherein said light transmissible panels comprise film.

10. A tint overlay panel for use with a pantone colour matching system colour booklet or the like; said panel including a series of light transmissible panels, each light transmissible panel being coloured a specific quantity of white.

11. The overlay panel of claim 10 wherein the number of said light transmissible panels is nine graded according to the following quantities of white: 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%.

12. The overlay panel of claim 11 wherein said light transmissible panels are made of photographic film exposed so as to achieve the desired quantity of colour throughout each panel.

13. The overlay panel of claim 12 wherein said film is exposed in a reverse manner whereby a given tint percentage to be associated with a given said light transmissible panel refers to a percent of panel area which allows light to pass therethrough without modification.

14. A method of producing colours for the purpose of specification for printing; said method comprising providing an overlay having a plurality of light transmissible panels graded by absence of a quantity of a white colour; said method comprising modifying a colour on a substrate by application of selected ones of said light transmissible panels over said colour whereby the appearance of said colour through said light transmissible panels is modified to produce a modified colour in a manner which can be specified for the purpose of printing said modified colour.

15. A tint overlay panel having a plurality of light transmissible panels thereon graded by quantity of a specified colour.

AMENDED CLAIMS

[received by the International Bureau on 25 November 1992 (25.11.92);
new claims 16 and 24 added;
other claims unchanged (5 pages)]

1. A method of producing colours for the purpose of specification for printing said method comprising providing a first overlay having a plurality of light transmissible panels graded by quantity of a first colour; a second overlay having a plurality of light transmissible panels graded by quantity of a second colour; a third overlay having a plurality of light transmissible panels graded by quantity of a third colour; a fourth overlay having a plurality of light transmissible panels graded by quantity of a fourth colour; said method further comprising modifying a colour on a substrate by application of one or more of selected ones of said light transmissible panels over said colour on said substrate whereby the appearance of said colour through said light transmissible panels is modified to produce a modified colour in a manner which can be specified for the purpose of printing said modified colour.
2. The method of claim 1 wherein said light transmissible panels are located so as to cover apertures in said overlays.
3. The method of claim 1 or claim 2 wherein said first, second, third and fourth colours comprise colours from which the majority of the colours of the spectrum can be created by appropriate superposition of said light transmissible panels.
4. The method of claim 3 wherein said plurality of light transmissible panels on any one of said first, second, third or fourth overlays comprise a series of light transmissible panels progressing from a panel at a first end having tint comprising a low quantity of colour to a panel at an other

end having a tint comprising a high quantity of colour.

5. The method of claim 4 wherein each said overlay includes two series of panels, a first series at a low definition and a second series at a higher definition.
6. The method of claim 5 wherein the definition of said first series is 65 screen and the definition of said second series is 150 screen.
7. The method of claim 6 wherein said first colour comprises black, said second colour comprises cyan, said third colour comprises magenta and said fourth colour comprises yellow.
8. The method of claim 7 wherein said quantities of colours on any one series of light transmissible panels on any one of said overlays is graded according to the following steps of tint: 5%, 10%, 15%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%.
9. The method of any previous claim wherein said light transmissible panels comprise film.
10. A tint overlay panel for use with a pantone colour matching system colour booklet or the like; said panel including a series of light transmissible panels, each light transmissible panel being coloured a specific quantity of white.
11. The overlay panel of claim 10 wherein the number of said light transmissible panels is nine graded according to the following quantities of white: 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%.

12. The overlay panel of claim 11 wherein said light transmissible panels are made of photographic film exposed so as to achieve the desired quantity of colour throughout each panel.

13. The overlay panel of claim 12 wherein said film is exposed in a reverse manner whereby a given tint percentage to be associated with a given said light transmissible panel refers to a percent of panel area which allows light to pass therethrough without modification.

14. A method of producing colours for the purpose of specification for printing; said method comprising providing an overlay having a plurality of light transmissible panels graded by absence of a quantity of a white colour; said method comprising modifying a colour on a substrate by application of selected ones of said light transmissible panels over said colour whereby the appearance of said colour through said light transmissible panels is modified to produce a modified colour in a manner which can be specified for the purpose of printing said modified colour.

15. A tint overlay panel having a plurality of light transmissible panels thereon graded by quantity of a specified colour.

16. A kit of overlays for the purpose of specification of colours for printing, said kit comprising a first overlay having a plurality of light transmissible panels graded by quantity of a first colour; a second overlay having a plurality of light transmissible panels graded by quantity of a second colour; a third overlay having a plurality of light

transmissible panels graded by quantity of a third colour; a fourth overlay having a plurality of light transmissible panels graded by quantity of a fourth colour; said kit adapted to present to the eye of the user a modification of the colour on a substrate by application of one or more of selected ones of said light transmissible panels over said colour on said substrate whereby the appearance of said colour through said light transmissible panels is modified to produce a modified colour in a manner which can be specified for the purpose of printing said modified colour.

17. The kit of claim 16 wherein said light transmissible panels are located so as to cover apertures in said overlays.

18. The kit of claim 17 wherein said first, second, third and fourth colours comprise colours from which the majority of the colours of the spectrum can be created by appropriate superposition of said light transmissible panels.

19. The kit of claim 18 wherein said plurality of light transmissible panels on any one of said first, second, third or fourth overlays comprise a series of light transmissible panels progressing from a panel at a first end having tint comprising a low quantity of colour to a panel at an other end having a tint comprising a high quantity of colour.

20. The kit of claim 19 wherein each said overlay includes two series of panels, a first series at a low definition and a second series at a higher definition.

21. The kit of claim 20 wherein the definition of said first series is 65 screen and the definition of said second series is 150 screen.

22. The kit of claim 21 wherein said first colour comprises black, said second colour comprises cyan, said third colour comprises magenta and said fourth colour comprises yellow.

23. The kit of claim 22 wherein said quantities of colours on any one series of light transmissible panels on any one of said overlays is graded according to the following steps of tint: 5%, 10%, 15%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, 90%, 100%.

24. The kit of claim 1 or claim 23 wherein said light transmissible panels comprise film.

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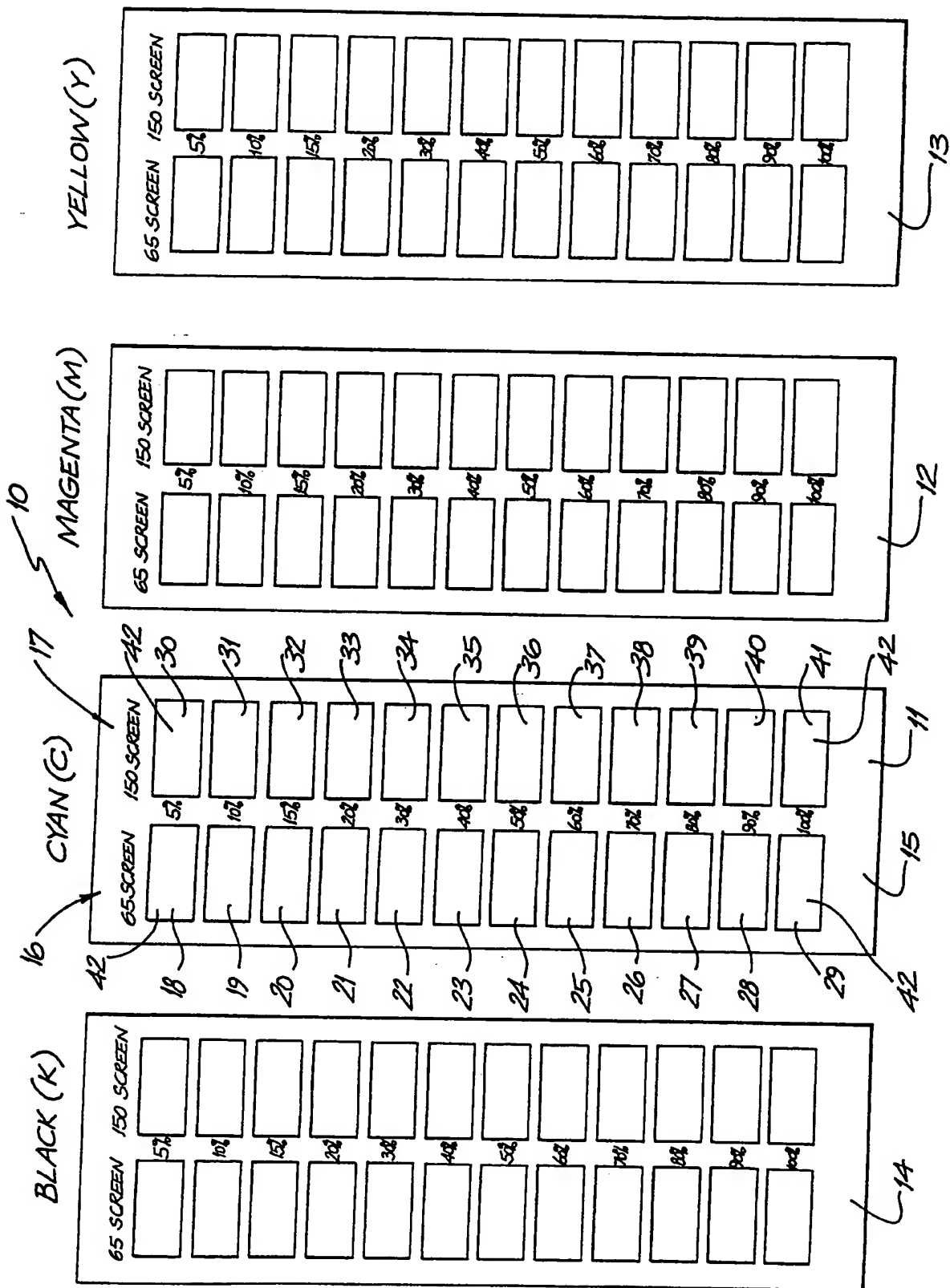


FIG. 1

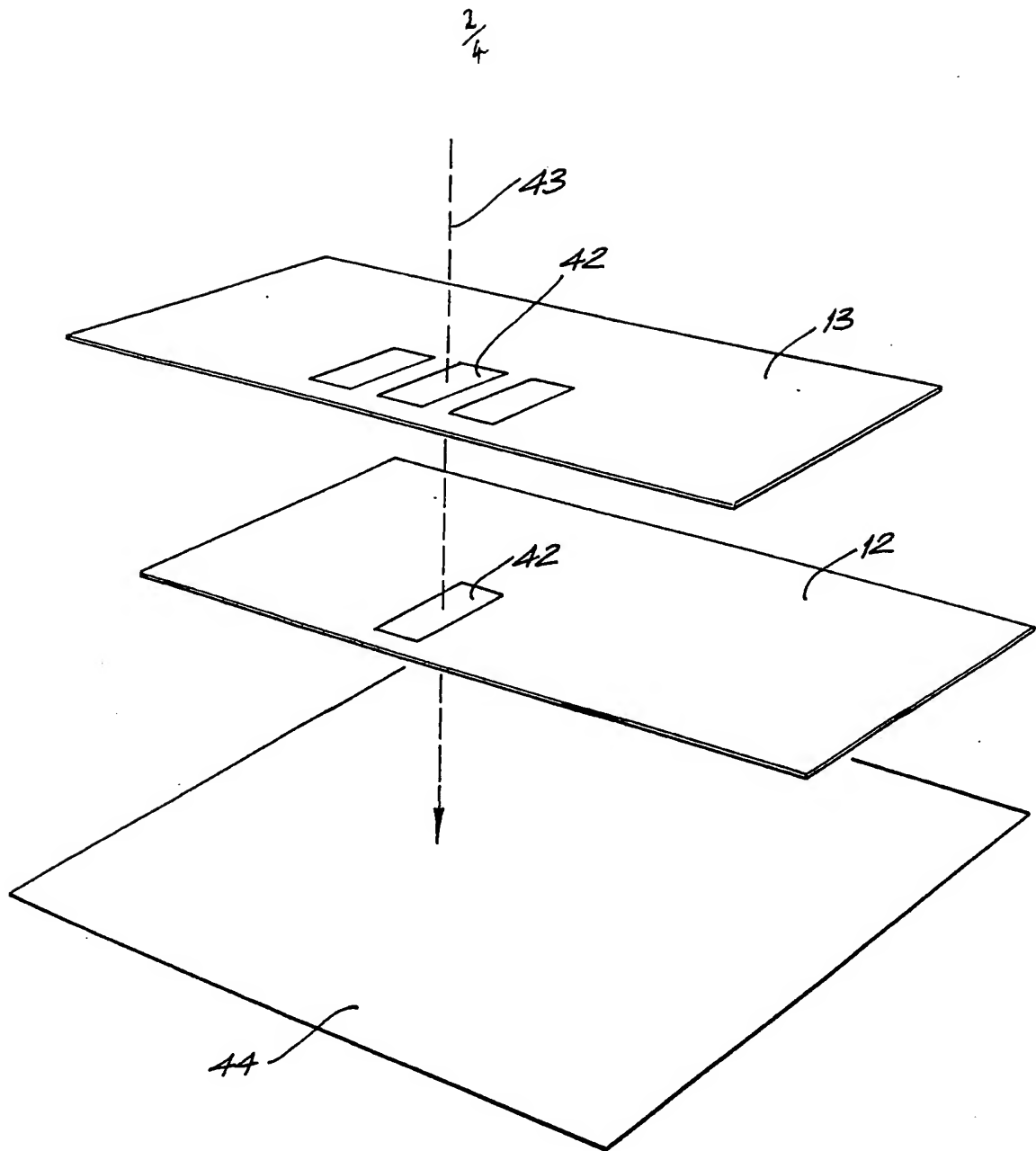


FIG. 2

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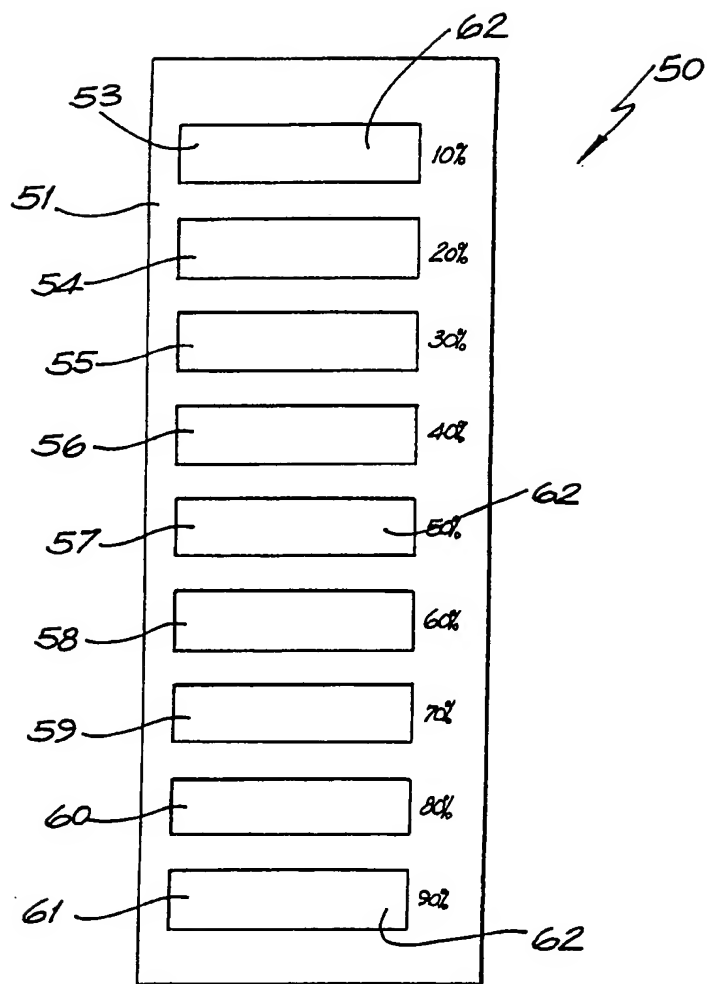


FIG. 3

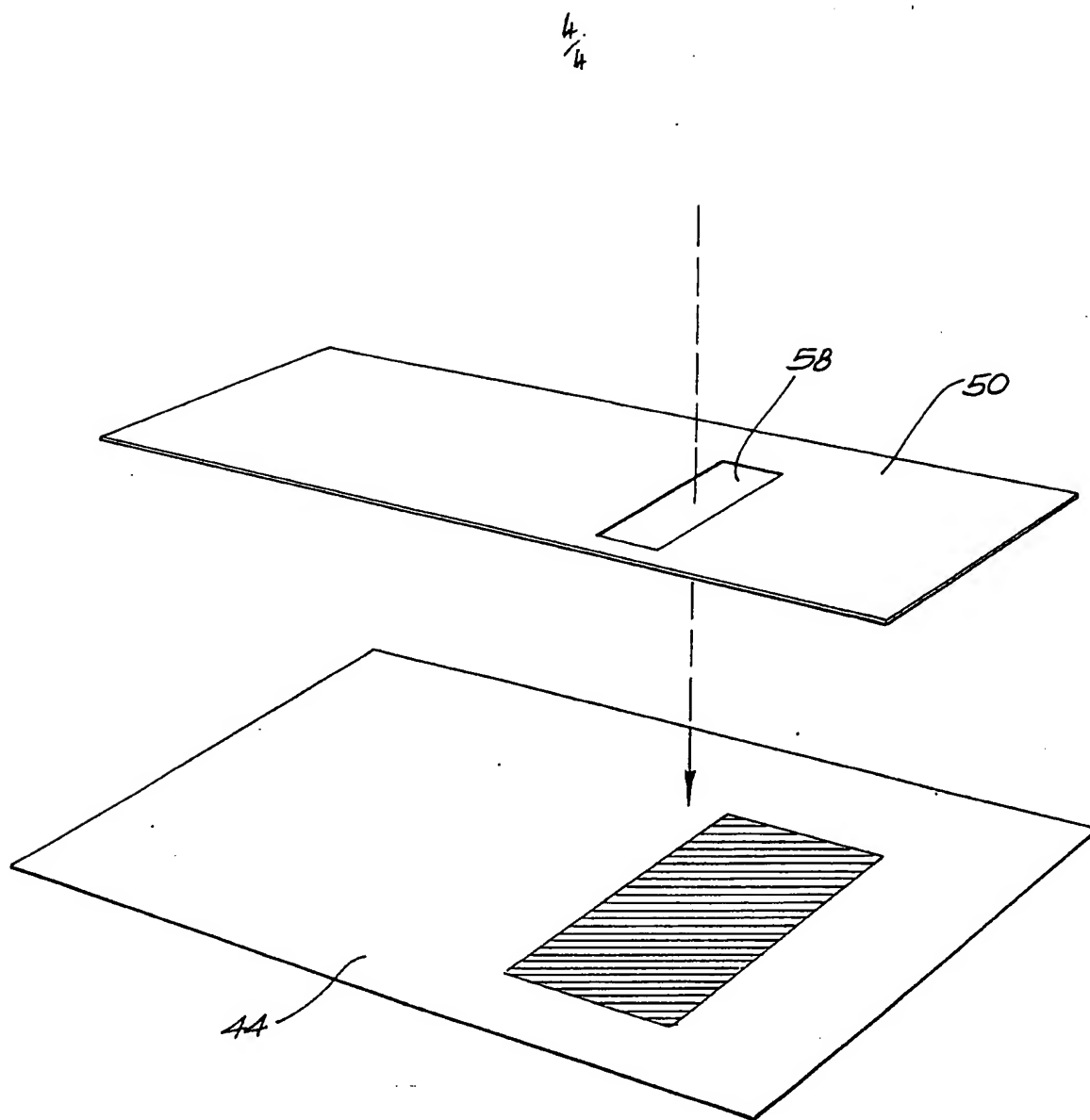



FIG. 4

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B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC : B44D 3/00; G03F 5/18, 5/22 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched AU : IPC as above Electronic data base consulted during the international search (name of data base, and where practicable, search terms used)				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.		
A	US,A, 3653771 (PIRINGER) 4 April 1972 (04.04.72)			
<div style="display: flex; justify-content: space-between; align-items: center;"> <div> <input type="checkbox"/> Further documents are listed in the continuation of Box C. </div> <div> <input checked="" type="checkbox"/> See patent family annex. </div> </div>				
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Date of the actual completion of the international search 26 October 1992 (26.10.92)		Date of mailing of the international search report 4 nov 1992 (04.11.92)		
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200 WODEN ACT 2606 AUSTRALIA Facsimile No. 06 2853929		Authorized officer  BARRY STEPHENS Telephone No. (06) 2832106		

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Patent Document Cited in Search Report		Patent Family Member	
US	3653771	DE	1622505
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